

H&RT Response to ICP- NOI Due 3:30 PM CST, 5/21/04

Noteworthy Points:

- For general questions, contact John Mankins 202-358- 4659 (I suppose, we go through Mark Fisher to avoid multiple calls to Mr. Mankins)
- Submit R&T technology proposals in ASTP (Advanced Space Technology Program) to reach TRL 4 to 5 by 2008, TMP (Technology Maturation Program) to reach TRL 6 by 2008 except for InStep, and ITTP (Innovative Technology Transfer Partnership Program)
- **Evaluation Criteria:** (1) relevance to H&RT objectives; (2) technical merit; (3) cost; (4) management plan (including teaming, especially research to research as well as research to development Centers); and (5) special factors such as readiness to begin a focused technology project. Develop an overall balanced H&RT portfolio.
- Refer to H&RT Formulation Plan goals & objectives, Version 2.0
- Remember H&RT emphasis on spiral development, etc.
- Technical goals & objectives: (1) spiral development with timeliness consistent with national vision – 2014 first crewed flight of a new CEV; HLR no later than 2020; and possible later spirals as per formulation plan.
- For architecture, refer to recent OExS Requirements Division studies, Office of Space Architect, and NEXT sponsored studies & others.
- Selections will be made consistent with supporting: (1) these (as in the bullet above) future exploration events: (2) sustainability (affordability, reliability/safety, effectiveness) and STCs (13 apostles) both at system of systems & subsystem levels; and (3) portfolio balance (see Formulation Plan & references).
- There will be another solicitation in Winter 2004/2005 based on gaps identified by OExS.
- Note that topics of solicitation in future intra- or extra-murals could be different.
- Eligibility Requirements: only NASA + JPL (can team with in/out NASA)
- **Project Duration & Other Award Info:**
 - (1) Must describe a complete 2-phase R&D plan (however a key product of first phase will be a detailed implementation plan of 2nd phase); (2) Phase 1 – no longer than to exceed 12 months for 10-15% of total cost; (3) Phase 2 – will depend on adequate progress on phase 1 milestones.

ASCT Tools & Databases – 12+36 months; \$4-8M total value per project

ASCT Concepts & Studies – 12+12 months; \$2-4M total value per project

Other ASTP Element Programs – 12+36 months; \$5-15M total value per project

IMPORTANT – MAY FAIL for not complying – consistency with H&RT scope, goals, and objectives; funding level; and period of performance.

See page 30 of ICP for \$ & time details for TMP (12-36 months for \$2-40 M).

- **Proposal Preparation & Submission: Notice of Intent (NOI) due 3:30 PM CST, Friday, May 21, 2004 – include:** Project Lead Last Name, Project Lead First Name, Project Title, Project Lead Organization (i.e., NASA Center), H&RT Program (i.e., AST or TM); Primary Element Program (see section B); Secondary Element Program (if applicable); Expected Participating NASA Centers & Other Collaborating Institutions (if applicable) – this info is non-binding; Preliminary Estimates (+/- 20%) of both budgetary scope & average number of FTEs over the entire project duration (i.e., rounded to the nearest FTE); Brief Summary (i.e., 500 words or less). This summary will serve as the proposal abstract.
- **Full proposal is due on June 14** (cover, executive summary, 8 pages of project description, 4 pages of management approach, personnel/biographical sketches, facilities & equipment, budget & supporting budgetary info, other supports, appendices.
- Proposal Review & Selection: (1) Technical Merit Review; (2) Integration Panel; (3) Selection
- **Topics: Read ICP for details – ASTP:**

ASCT (Advanced Studies, Concepts, and Tools) – 4 themes: (1) advanced concepts – TRL 2-3; (2) technology-systems analysis ; (3) technology databases; and (4) systems design & engineering analysis tools.

AMSC (Advanced Materials & Structural Concepts) – 6 themes: (1) advanced materials; (2) structural concepts, dynamics, and controls; (3) mechanisms & interconnects; (4) flexible fiber systems; (5) “smart” materials & structures; and (6) space environments & Effects.

Communications, Computing, Electronics, and Imaging (CCEI) – 7 themes: (1) general purpose computing & data storage; (2) switches, networks, & internal communications; (3) photonics-based computing & sensing; (4) advanced electronics; (5) advanced sensor concepts; (6) MEMS applications; and (7) advanced space communications.

Software, Intelligent Systems & Modeling (SISM): 6 themes: (1) autonomy & intelligence; (2) human-automation interaction; (3) multi-agent teaming; (4) software engineering for reliability; (5) health management technologies; and (6) modeling, simulation & visualization.

Power, propulsion, & Chemical Systems (PPCS): 9 themes: (1) energy conversion; (2) power management & distribution; (3) energy storage; (4) thermal management; (5) Thermal-electrical & chemistry-based processing of materials; (6) advanced chemical

propulsion; (7) advanced electric-electromagnetic propulsion; (8) launch assist & other novel propulsion concepts; and (9) novel power & transmission technologies.

- **Topics: Read ICP for details – TMP:**

High Energy Space Systems (HESS) Technologies: 6 themes (see ICP)

Advanced Space Platforms & Systems ASPS Technology (5 themes (see ICP)

Advanced Space operations (ASO) technology: 5 themes (see ICP)

Lunar & Planetary Surface Operations (LPSO) Technology : 4 themes (see ICP)

In-space Technology Experiments Program In-STEP): 4 themes (see ICP)

- **Topics: Read ICP for details – ITTP: - TT, SBIR, AND STTR (see ICP)**